The Week In Engineering and Construction

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Detroit building wage-rate award seen setting precedent

Arbitration board's decision viewed as expressing government's policy on stabilization and providing machinery for other cases. Raises granted are few and small.

Last week's arbitration award on construction wage rates in Detroit is seen in Washington as setting two important precedents. It is a more-or-less official expression of government policy—in the light of the President's wage stabilization program—on the trend of construction wage rates. And it establishes machinery by which similar determinations can be obtained in other areas.

Union agreements governing Detroit wage rates in the building trades expired May 1. Some time previously the unions presented demands for increases and an agreement was made to submit the dispute to binding arbitration. Members of the Board of Review set up under last year's construction labor stabilization agreement constituted themselves a board of arbitration. Under the stabilization agreement the Board of Review has no jurisdiction over wage questions.

The Board consists of Louis Comstock, Chairman, Major James T. O'Connell of the War Department of the AFL.

In passing on the dispute, the arbitration board adopted the principle that "in these days of war emergency . . . and as a helpful hedge against inflation, there should be no attempt to alter the wage scales more than to bring into line some wage scales that seemed definitely out of line."

The decision left unchanged rates of the highest paid trades such as hoisting engineers, spray painters, and iron workers ($1.75). Bricklayers and non-residential tile setters got small increases to put them on a parity at $1.67½ with the plasterers and lathers. The brush painters, floor decorators, carpenters, cement finishers, and reinforcing steel workers, with rates of $1.37½ and $1.40, were raised to the $1.50 rate of the riggers and sheet metal workers. Apprentice hoisting engineers and tile setters helpers are put on a par with plasterer's tenders at $1.12½. Common labor was raised from $.87½ to $.90. Truck drivers get 5c extra.

There was some initial confusion as to whether rates thus arrived at under the machinery of the stabilization agreement took precedence over the clause in the agreement specifying that rates remain the same during the life of any war job. Apparently the latter clause governs, and the new rates will go into effect as jobs are completed.

It is generally expected that wage issues in other areas will be brought up for decision in the manner pioneered by the Detroit builders and unions.

Rates raised in Twin Cities

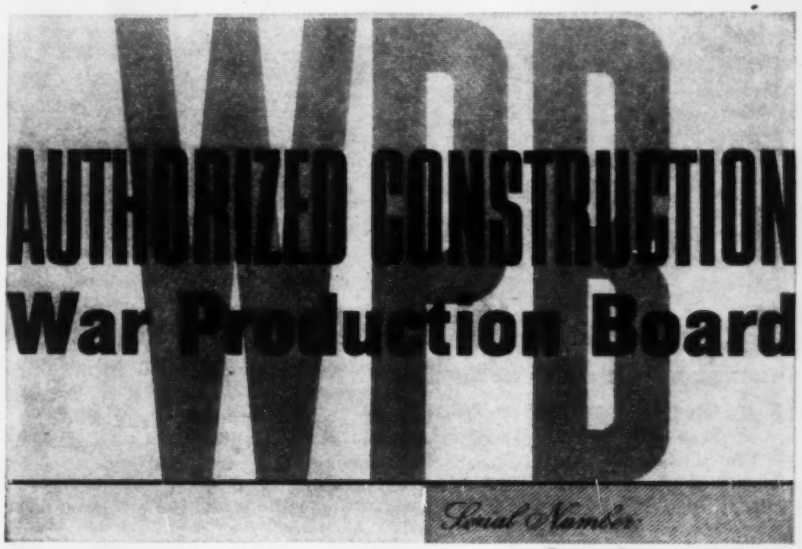
Building trades rates in Minneapolis and St. Paul have been raised from 2½¢ to 12½¢ per hour under agreements reached between the building employers and labor unions. Not all demands have yet been settled. Plaster tenders in both cities have demanded an increase from $1.15 to $1.25. St. Paul plasterers have asked an increase from $1.50 to $1.75.

The following table shows the rates agreed upon, and in most instances the increases are the first in six years:

Class	*City*	*Old Rate*	*New Rate*
Laborers	Minneapolis	90¢	92½¢
Laborers	St. Paul	85¢	92½¢
Carpenters	Twin Cities	$1.25	$1.37½
Roofers	Twin Cities	$1.20	$1.30½
Cement finishers	St. Paul	$1.25	$1.37½
Painters	Twin Cities	$1.25	$1.35
Plumbers	St. Paul	$1.37½	$1.50

The District Building Trade Council of St. John, New Brunswick, composed wholly of A.F.L. unions, has joined forces with the local branch of the Canadian Construction Association, in a move to obtain government administration of four schedules of wages and hours in the construction industry.

The move involves the appointment of an inspector by the provincial labor department. A delegation composed of three members of the branch of the C.C.A., and three from the Building Trade Council consulted labor department executives at Fredericton to present the joint request. As a part of the conference, delegates said they had agreed on the need for several amendments to existing legislation, and such amendments will be drafted and formally presented in the near future.



O.E.M. photo

This official poster may be displayed on construction work that costs more than $500, to indicate that the project has been approved by the War Production Board. Projects approved hereafter will receive these cards automatically.

WASHINGTON HIGHLIGHTS

USERS of blanket priorities in the P-19 series are no longer required to make any formal reports to the War Production Board under an amendment to Priorities Regulation No. 3.

RESTRICTIONS on construction imposed by order L-41 have been eased for motion-picture producers building sets. Whereas the order exempts commercial construction only if it costs less than $5,000, movie sets have been exempted if they use less than $5,000 worth of newly purchased material. They may use without limit materials already in their own inventory, in the inventory of another producer, or in the inventory of a firm in the business of leasing sets.

TO CLEAR the way for a huge lumber-buying program by the War Department, the War Production Board is expected soon to issue an order suspending for sixty days all sale of lumber to distributors. This would give the Army first call on the full output of sawmills. It is believed that distributors' stocks will be sufficient to meet most civilian needs for the shutdown period. Centralized purchasing of lumber for Army projects has been in effect for more than a year. Donald Nelson, meanwhile, has asked all logging operators and sawmills to step up production of soft-wood construction lumber—boards, dimension lumber, and timbers—to the maximum in preparation for the coming demand.

STOPPAGE of some non-essential construction jobs which are now permitted because they were under construction on April 9, effective date of L-41, appears to be an early probability, though no jobs have been shut down as yet. Problem now being discussed by WPB officials is whether to do the job selectively, stopping certain clearly unjustifiable projects, or whether to require that all jobs which had not achieved a certain percentage of completion April 9 come in for an authorization.

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Wood bridge may replace flood-damaged steel span

The Kansas State Highway Department last week considered replacing a $50,000 steel bridge across the Cimarron River near Ulysses, damaged in recent floods, with a $5,000 wooden structure.

The steel bridge, a link in U. S. Highway 270 between Ulysses and Hugoton, was in process of reconstruction when the river washed out temporary structure work.

Willard Mayberry, commissioner for the Seventh Highway District, said that a low-water bridge, constructed of wood may be built across the river to serve as a replacement for the structure until the current steel situation is eased and a permanent structure can be erected.

Malheur Dam break minor

A break in the control works of the Bureau of Reclamation's Malheur River Dam, in Oregon, reported as serious in news accounts was said last week to be minor.

S. O. Harper, chief engineer for the Bureau at Denver, Colo. said that total damage amounts to only a few hundred dollars. Mr. Harper said that one of the anchor bolts for a bearing of the radial gate failed, apparently because of defective metal, and this failure caused displacement of the common bearing assembly for the two adjacent radial gates, permitting both gates to swing out into the spillway channel and release about 1,500 sec. ft. of water through the spillway to the Malheur River.

Total capacity of the three spillway gates is about 12,000 sec. ft., and therefore there was no danger of flood damage. The openings on the two displaced gates have been closed by flashboards until repairs are made.

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Gowanus parkway section opened for car travel

A new section of the Gowanus elevated parkway in Brooklyn, N. Y., extending from Prospect Ave. to the proposed entrance of the Brooklyn-Battery tunnel at Hicks St., was opened for traffic recently by the Triborough Bridge Authority. The section is part of the Gowanus improvement project (*ENR*, Jan. 22, p. 150) and completes the Belt Parkway from the Bronx-Whitestone Bridge in Queens to the tunnel.

To eliminate delays due to bridge openings, the parkway crosses Gowanus Canal with a clearance of 90 ft. above the water. There are three lanes for traffic in each direction, divided by a center mall. Use of the elevated parkway is limited to passenger vehicles.

The improvement was built by the Triborough Bridge Authority at a cost of about $15,000,000 for land and construction. In announcing the opening, the Authority said that when "minor" construction work is completed on the Hamilton Ave. lift bridge, the parkway will be complete and will be turned over to the various New York City agencies that will operate it.

Tank car fire damages West Virginia bridge

Fire in the wreckage of [illegible]ed tank cars under a highway brid[illegible] in West Virginia severly damaged [illegible] bridge, putting it out of service temp[illegible]ily during the early part of last [illegible]s. The bridge carries U. S. Highway [illegible] over the B. & O. R. R. tracks near [illegible] Gate, West Va., and is 580 ft. lon[illegible] with a 30-ft. roadway. The main s[illegible] made up of 70-ft. steel beams was [illegible]damaged to the extent of about $10,000. [illegible]-way traffic has been restored over the bridge during repairs, according to L. [illegible] Jemison, bridge engineer of the state highway department.

Burning oil from the tank cars flowed downstream to the village of Toll Gate, setting fire to houses there.

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Plan draining Canadian lake to recover iron ore

Canadian engineers last week made plans to drain Steep Rock lake, midway between Fort Arthur and Fort Frances, Ontario, to permit recovery of an estimated 15,000,000 tons of high grade iron ore.

Preliminary exploration work, which has already cost a million dollars, has revealed a deposit of at least fifty million tons of 60 to 65 percent high grade iron ore—one of the most important deposits in North America. Working of the deposit cannot be undertaken without draining the lake and such draining would interfere with existing power developments.

The Moose River dam and power house of the Seine River Development Company, which is controlled by the Ontario-Minnesota Pulp & Paper Company, is located at the head of the lake. This plant develops 10,500 hp. for the paper company's operations at Fort Frances.

A bill introduced into the Ontario Legislature covers essential agreements—between the Hydro Electric Power Commission of the Province and the Ontario-Minnesota Pulp & Paper Company; the Steep Rock Iron Mines and the Seine River Development Company; and between the Pulp and Paper Company and the Steep Rock Iron Mines. The agreement must be approved before the Hydro commission is permitted to build a transmission line from Port Arthur to the site, to supply 6,000 hp. for the mining operations and replace the power generated by the Moose River plant for the paper company's supply.

The power plant is to be left intact, ready for use, should the draining of the lake fail. The transmission line will cost about $1,000,000, the cost to be borne by the mining company.

Draining the lake will involve removing 150,000,000 gallons of water.

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Currier workers quit CIO in row over Lewis policies, AFL seeks new contract

700 employees vote to abandon former affiliation after deciding against paying per capita tax to the United Mine Workers

The 700 employees of the Currier Lumber Company, of Detroit, whose affiliation with the Congress of Industrial Organization was a factor in a senate investigation (*ENR*, Oct. 9, 1941, p. 473 and previous), last week voted to join the American Federation of Labor's Detroit building trades union.

The Detroit AFL council has announced it has received voluntary pledges of membership from the workers, and will seek a new closed-shop, check-off contract with the management. The Construction Workers' Union, CIO, is headed by A. D. (Denny) Lewis, a brother of John L. Lewis. The union had not received widespread support, from other CIO-affiliated Detroit unions, even the United Automobile Workers having gone to the extent of hiring AFL carpenters to remodel its new international headquarters.

In recent weeks, AFL pickets have surrounded the main offices of the lumber company, had been evident at a housing project in Royal Oak and in the Currier yards in Royal Oak. Trouble among the men developed two weeks ago when the union local decided to refrain from paying a per capita tax to the United Mine Workers, which is the parent organization.

The Senate investigation occurred after Patrick J. Currier, president of the Detroit firm, charged that his low bid on a project at Wayne, Mich. was rejected, ostensibly because he recognized the wrong union.

Like Wentzville

The workers' action is strikingly similar to that taken recently in a controversy between the AFL and CIO over the erection of prefabricated houses for the Farm Security Administration at Wayneville, Mo. (*ENR*, Apr. 30, 1942, p. 738 and previous). The controversy ended when the contractor, J. M. Jack of Kansas City, Mo. decided to do the work with AFL.

The dispute, which involved the AFL monopoly feature of the construction labor stabilization agreement, arose when AFL carpenters objected to erecting houses fabricated in a CIO shop.

Chicago decontamination squad in action

One of 18 poison gas decontamination squads organized by the Chicago department of public works as part of its civilian defense program, is shown above during a demonstration before city engineering officials.

Wearing gas masks and gas-proof rubber clothing, the squad answered a mock gas raid alarm after smoke bombs were dropped from a roof and thrown against a wall to simulate a gas attack. The squad first roped off the area, set up warning signs, and then threw sand on the gas-forming chemicals while one of the group took samples of the gas to determine the nature.

The type of gas was analyzed within a few seconds, and sprays of neutralizing chemicals were applied to the gas area. Thereafter, the walls and street were scrubbed with a fire hose and stiff brooms, and all waste water swept into the nearest manhole.

Within 27 minutes, all traces of the gas and chemicals had been removed.

Engineer Corps sets up Mountain Division office

A new division office of the Corps of Engineers, comprising most of Colorado and Utah and parts of Idaho, Wyoming and Arizona, has been established at Salt Lake City, Utah, with Col. Edward M. George, formerly district engineer at Salt Lake City, as division engineer. Formation of the new division, known as the Mountain Division, removes Utah from the South Pacific Division, which has headquarters at San Francisco.

Col. E. G. Thomas, formerly constructing quartermaster at the Utah Ordnance Plant and an assistant to Colonel George during the past few months, will become Salt Lake district engineer. Col. Carl H. Jabelonsky, Denver district engineer, will remain in his post, and will be assisted by Maj. Rulon J. Ballard, formerly an assistant to Colonel George.

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Milwaukee seeks director for harbor operations

The City Service Commission of Milwaukee, Wis., said last week it was seeking applicants for the position of municipal port director. The vacancy is to be filled by means of a Civil Service examination to be held in various cities to meet the convenience of candidates.

Duties include extensive executive responsibilities and the post requires a comprehensive knowledge of the economics of water transportation and harbor administration. Salary is on a sliding scale beginning at $3,600 per year and going up in three annual steps to $4,500. An information sheet, giving full details, is being prepared and will be sent on request by the commission, Room 716, City Hall, Milwaukee, Wis.

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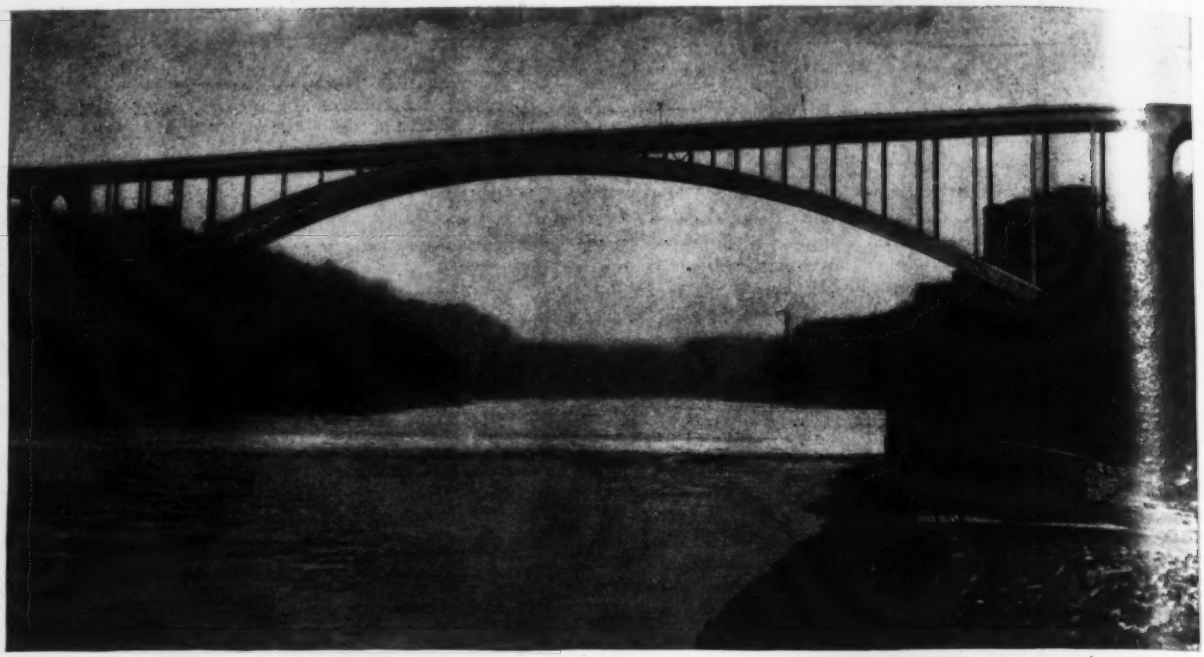
Last Delaware Aqueduct section holed through

The last section of the more than 80 miles of tunnel making up New York's Delaware aqueduct was holed through last week, when a workman set off a charge of dynamite underground near Ellenville, N. Y.

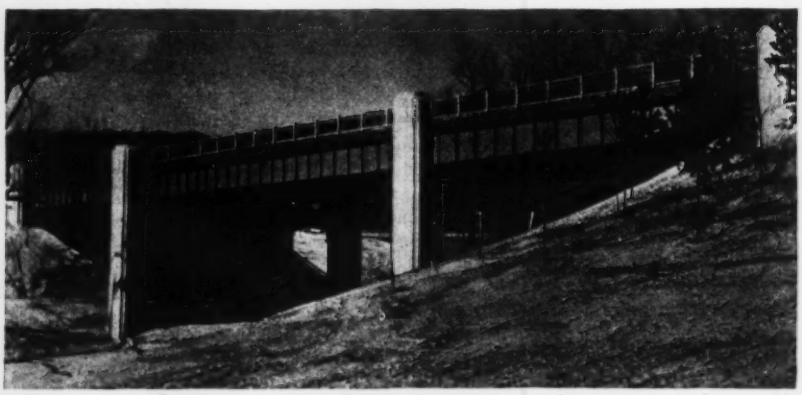
The holing through brings tunnel work on the aqueduct to about 80 percent of completion.

Driving of the 4,780 ft. of tunnel in the last section was carried out between October 15, 1941 and last week. John M. Ribble, manager for Mason & Hanger, who held the contract for the section, said that the roof was supported throughout the length of the tunnel, since driving was done through fine grained sandstone and red shale.

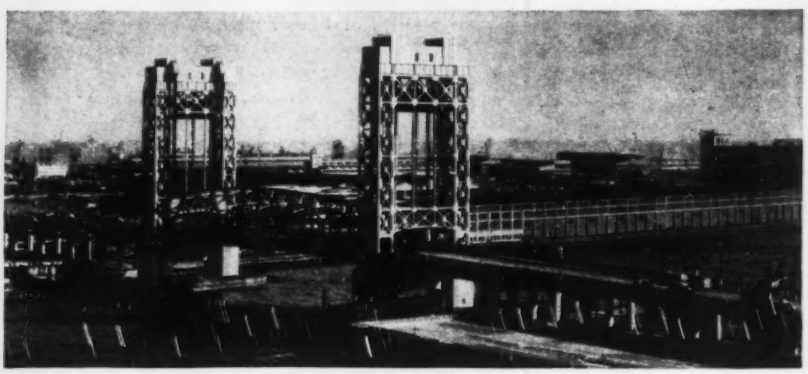


The Rainbow Bridge at Niagara Falls, N. Y., voted most beautiful monumental bridge built in the United States during 1941.

Prize winners in steel bridge competition



Cuyahoga County, Ohio, is the setting for the Fairmount Boulevard Bridge, shown above, voted the finest looking in small-bridge classification.



New Jersey's Passaic River lift bridge, on the Lincoln Highway between Newark and Kearny was chosen as most outstanding in the movable-bridge group.

The Rainbow Bridge over the Niagara River at Niagara Falls, N. Y., last week was named the most beautiful monumental bridge built during 1941, as results of the 14th annual contest of the American Institute of Steel Construction were announced.

Two other winners in their classes were the Fairmount Boulevard Bridge, in Cuyahoga County, Ohio, judged the most beautiful small bridge; and the Passaic River Bridge, at Kearny, N. J., most beautiful movable bridge.

A five-man jury, consisting of Grosvenor Atterbury, New York architect; Prof. Carlton T. Bishop, of Yale University; Kenneth Reid, editor of Pencil Points; Prof. Harold E. Wessman, of New York University, and Frederick J. Woodbridge, New York architect, withheld an award for the most beautiful bridge of medium size, although it made three honorable mentions in that class.

The Rainbow Bridge, over the Niagara River, cost $4,000,000. Engineers were Waddell & Hardesty, of New York, and the Edward P. Lupfer Corp., Buffalo; architectural consultant was Aymar Embury II; fabricators and erectors were the Bethlehem Steel Co. The bridge, owned by the Niagara Falls Bridge Commission, was completed and opened to traffic Nov. 1, 1941.

The Fairmount Boulevard Bridge, in Hunting Valley Village, Ohio, cost $114,000. The engineer was John O. McWilliams, county engineer of Cuya-

hoga County; fabricators were the Fort Pitt Bridge Works, and the bridge is owned by the Board of County Commissioners. The structure was opened to traffic in December 1941.

The Passaic River bridge, on State Highway Route 25 between Newark and Kearny, N. J., cost a total of $2,000,000. Engineers were Morris Goodkind, bridge engineer for the state highway department, Howard, Needles, Tammen & Bergendoff, consulting engineers; fabricators and erectors were the American Bridge Co. The bridge is owned by the state highway department of New Jersey, and was completed Feb. 15, 1941.

Honorable mention in Class C—medium sized bridges—was given to the Meramec River Bridge, on Route 21TR between St. Louis and Jefferson Counties, St. Louis, Missouri; to the Wax Lake highway bridge in Calumet, St. Mary Parish, Louisiana, and to the Southern Pacific Ry. bridge over Wax Lake outlet, also at Calumet.

Gas rationing affects construction men

Here is what gasoline rationing means to construction men in the eastern rationing area:

Trucks need no ration card, may buy gas freely.

No ration card is needed to buy gas for off-the-road equipment. In making bulk purchases of gas for such equipment, the purchaser will be required by the seller to fill out a statement certifying the use to be made of the gasoline. A similar form must be filled out when making bulk purchases of gasoline for trucks.

Passenger cars may be granted "X" cards entitling them to unlimited purchases of gasoline if they are used principally for certain purposes, including: Official business of any government; for transportation of materials, for trucking, delivery or messenger service; equipment, or work crews for construction or for mechanical, electrical, structural, or highway maintenance or repair.

Other cars used in the course of work or transportation to and from work may get B-1, B-2, or B-3 cards permitting the purchase of 33, 45, and 57 gallons, respectively up to July 1. These are issued at schools at the time of registration. If 57 gallons is not enough, application should be made to a local rationing board, which may issue one or more additional cards.

This system is temporary, will be replaced July 1 by a permanent one.

Half-billion in post-war jobs planned in New York

An ambitious building program involving the expenditure of $628,518,200 for post-war construction has been made public by the New York City Planning Commission. The program is designed to take up any slack in employment that may result from ending of war demands on industry.

As outlined the program calls for construction of 46 new school buildings; a $12,680,000 Harlem River Drive; a new Raymond Street jail in Brooklyn; new general hospitals in Harlem, the east Bronx and Astoria, and a $19,000,000 lower Manhattan crosstown express highway, crossing that borough in the vicinity of Canal St. Studies are planned of the feasibility of constructing crosstown express thoroughfares in the vicinity of 59th St. and 37th St., in Manhattan, and of a vehicular tunnel between Staten Island and Brooklyn.

Also included are new public housing projects costing a total of $91,000,000, an $83,285,800 sewage disposal system program, a library for the College of the City of New York, a high school of aviation trades at La Guardia Field, Queens, continued development of Flushing Meadows Park and other work.

Many of the projects listed were started or were in the planning stage when the current emergency forced deferment due to lack of materials or funds.

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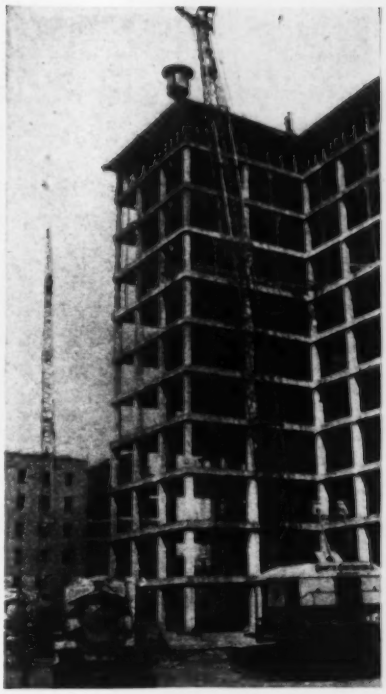
Graduate examinations approved by N. Y. board

Examination of young engineers immediately following their graduation from college was approved in principle recently by the New York State Board of Examiners of Professional Engineers. Under present regulations, applicants for a license to practice engineering in New York State are not permitted to take written examinations in the fundamentals of engineering until they have gained the amount of practical experience required by the state license law. A change in this procedure has been urged upon the board by the New York State Society of Professional Engineers and student chapters of the American Society of Civil Engineers.

Details of the new plan are to be worked out by the Board in cooperation with the New York State Education Department, which is charged with administration of the engineer license law.

A major question yet to be solved is whether young engineers who have passed the examinations in fundamentals can be given some official status such as "engineer in training," as is done in British Columbia.



Twelve-story boom for placing concrete

A crane equipped with an 110-ft. long boom with a 20 ft. gooseneck jib is being used to place concrete on the 11th and 12th floors of the Fort Green Defense Housing development near the Brooklyn Navy Yard in New York. A 10 ft. addition to the boom will permit placing the concrete for the 13th floor and roof. The housing project is composed of four 13-story, four 11-story and twenty-seven 6-story buildings and will contain 3,500 living units. Work is being done by the N. Y. Housing Authority. D M W Contracting Co. of Brooklyn is general contractor, and concrete is being placed by Three Companies, Inc., made up of Knickerbocker Concrete Arch Const. Co., Inc., Corbetta Const. Co., Inc. and Willcox Const. Co., Inc. C. H. Davidson is project manager and P. L. Moccia is superintendent.

Wood ramps proposed for new Pittsburgh highway

Construction of a $1,000,000 section of the Sawmill Run boulevard, through the West End section of Pittsburgh, Pa., hinges on whether the state will approve a change in plans permitting use of wood instead of steel for ramps. The state has agreed to pay the physical cost of the new roadway.

State engineers propose that use of steel be eliminated for ramps by using concrete construction. County commissioners, however, fearing that concrete ramps would add to the county's share of the cost by necessitating additional condemnation of property, countered the suggestion by offering to use wooden ramps to be replaced later with steel.

Movements of the 4,200-ft. span of the Golden Gate Bridge are no[w] liter-ally being put under the microscope for analytical study. Records o[f] wind direction and velocity are being recorded 24 hr. daily, supplemen[ted] on occasion by observations of bridge deck movements, both vertic[al] and horizontal. Here S. J. Dickson, maintenance superintendent, Golde[n] Gate Bridge and Highway District, is checking the position of a string of m[ark]ers on suspender cables. The transit legs are set in metal cups perma[nent]ly bedded in the concrete floor of the bridge beside the south tow[er]. A room inside this tower contains remote recording instruments which chart data for analysis.

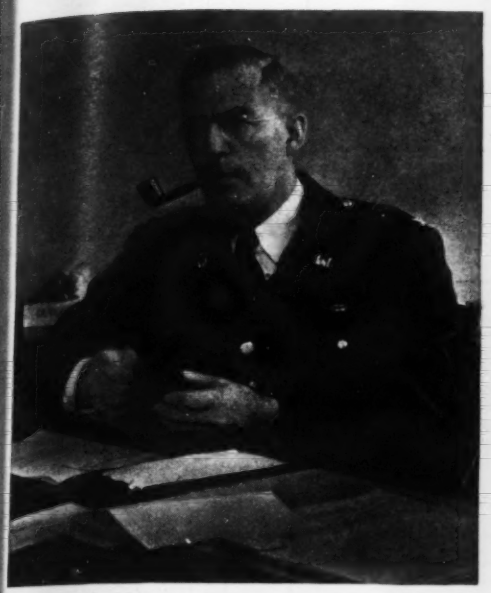
MEN AT WORK

Obtaining good priority ratings to speed up deliveries of materials and equipment purchased in the United States is a major duty of FRANCISCO GOMEZ-PEREZ, sub-director of coordination for the Mexican National Commission of Irrigation, Mexico City. His department reports that the Mexican federal government, during 1941 ordered $2,000,000 worth of irrigation construction machinery from American manufacturers.

MAJ. FRANK REED, JR., who built Camp Robinson and Fort Leonard Wood as a constructing quartermaster, is now wearing engineer castles as area engineer on a big ordnance plant job.

Urgently needed homes for defense workers in industrial districts near Los Angeles have been provided at rates to break all records by the Griffith-Legg Co. Their three top executives shown here were in charge of Wyvernwood built last year and are just now finishing the first 585 home units of the $15,000,000 Lakewood City project at Long Beach, Calif. Left to right they are: WILLIAM STEARNS, general foreman; C. F. HERZIGER, project manager, and HARRY L. BRITTAIN in charge of purchasing and coordination.

C. A. LEONARD (left), in charge of the design section in the Rock Island, Ill., district office, U. S. Engineers, discusses an important point with H. G. McCORMICK (center), principal engineer, and LT. COL. W. J. MATTESON, executive assistant to the district engineer. The first two men have been employed in the Rock Island office for several years, while Colonel Matteson has been in the office since May 1, 1939.



COL. WILLIAM N. CAREY, chief engineer of the Federal Works Agency who is in charge of planning and construction of war public works and other projects of the FWA. Prior to his appointment as chief engineer of the Federal Works Agency, Col. Carey was on duty in Jacksonville, Fla., where he had charge of design and construction of Air Corps facilities.

Up from the bottom of the coagulation basins at Chicago's new water treatment plant come CARL RIGGENBACK, resident engineer in charge of construction, and W. W. De BERARD, city engineer.

The water supply and sanitation program of the Mexican federal government is supervised by OTON SALVADOR OROZCO, director general of engineering, sanitation and water supply branch, department of public health of Mexico. He reports that this year his government plans a $3,000,000 water supply improvement program, which is triple that of 1941.

By having been city engineer of Jefferson City, Mo., for the past 9 years, and assistant city engineer from 1927 to 1933, R. D. FOWLER probably knows more about the existing engineering structures of that municipality than any man.

Building highways or building ordnance plants is all in the day's work to DON McKINNON, former state highway engineer of Montana, now project manager for the contractor on a big war plant.

CHAS. W. COLE, consulting engineer of South Bend, Ind., has just started his third reign as architect-engineer on ordnance plants. Here he talks over the two-way radio system installed on the job, but it seems to be an amiable conversation.

U. S. Army Engineers unloading equipment at Dawson Creek, B. C., for work on Alaska Highway

Army Engineers Win First Battle In Building New Alaska Highway

In getting the equipment for building the pioneer Alaska Road across the ice of mile-wide Peace River at Fort St. John, B. C., less than a week before the ice broke up the U. S. Army Engineers won their first battle in construction of the vital inland highway to Fairbanks, Alaska. By winning this exciting race against time the engineers are off to a good start in building the road, for if the equipment had been trapped on the south side of the river by running ice, weeks of delay might have resulted until a bridge could be built. The existing timber bridge at Fort St. John is inadequate to carry heavy construction equipment.

A solid trainload of Caterpillar diesel tractors, equipped with LeTourneau and LaPlant Choate bulldozers, was rushed from Peoria, Ill., to end of rail at Dawson Creek, B. C. Here the tractors met a shipment of Willamette Hyster winches from Portland, Ore., several light cranes and shovels and some heavy-duty trailers. Because of the imminent break-up, there was no time to install the winches, and the whole array of equipment was rushed overland 60 miles to the river crossing at Fort St. John. Some of the units were hauled on the trailers pulled by tractors, others made the trek under their own power. The pioneer road is being built by U. S. Engineer Corps troops under the direction of Col. Wm. M. Hoge. The accompanying photographs were furnished by the Caterpillar Tractor Co.

Hauling equipment across the Peace River ice at Fort St. John, B. C., a few days before the ice broke up. The timber bridge is too light for the heavy loads.

Tough going. Three tractors struggle with a shovel-loaded trailer buried in the mud on the banks of the Peace River.

Virginia plans big bridge for post-war period

Preliminary plans and estimates for a large suspension bridge over the York River at Yorktown are being made by the Virginia Highway Department to permit start of construction promptly in the post-war period if it is not found desirable to build the bridge at present. The structure would give better access to war establishments in the coastal areas of the state.

The proposed bridge would have a central span of 1,380 ft., an under-clearance of 135 ft. above tidewater over a 300-ft. width at mid-span, a 26-ft. roadway and two 3-ft. sidewalks. It is one of eight bridge and ferry projects authorized by an act of the state legislature in 1940, which act provides that before a project can be financed by a bond issue the highway commission must determine that the project will be self-liquidating on a toll basis. Some of the projects already have been eliminated for lack of such a showing; the York River Bridge is the first to be advanced to the preliminary design stage.

Recently a contract for the preliminary design studies and estimates, including estimates of critical material requirements, was let to Parsons, Klapp, Brinckerhoff & Douglas, New York. O. H. Ammann, consulting engineer, New York, is associated with this firm on design of the suspended structure. The contract for engineering services expires automatically 60 days after submission of the cost estimate if it is determined that no funds for the project are available. Bids on the borings from which foundation plans and estimates are to be made were received recently and a contract for that work is expected to be let immediately.

The Virginia State Highway Department also plans to go ahead with studies for three by-pass highways, one at Richmond, one at Petersburg, and one at Suffolk, west of Norfolk. Funds for the surveys are available, but construction cannot be undertaken until after the war. The surveys may show that legislation is needed before construction can be undertaken, because a large amount of the work may be within the corporate limits of the cities to be bypassed.

James A. Anderson is commissioner of the Virginia State Highway Department, and C. S. Mullen is chief engineer.

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Seek junior engineers

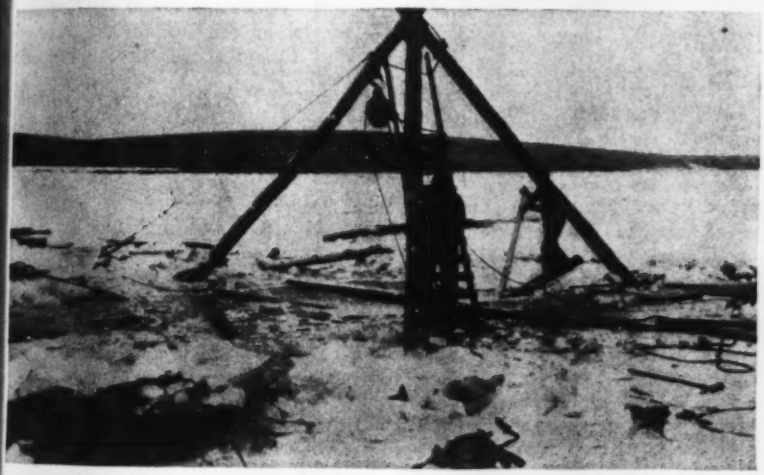
THE Civil Service Commission of the City of Glendale, Cal., has announced examinations for the post of junior engineering aid. Salary ranges from $112 to $140 per month, and residence requirements are waived. Closing date for filing application is May 19.

Lytle, Green get initial Alaska Highway contract

Attacking what is one of the longest and toughest highway jobs of modern times, the Public Roads Administration last week awarded the first contract on the new highway to connect Alaska with the United States. C. F. Lytle of Sioux City and Green Construction Co. of Des Moines, Iowa, have jointly taken a contract to manage construction of the 150-mile section in Alaska proper.

Bulk of the work is being done in two stages. In the sections in British Columbia and Saskatchewan that are difficult to reach, the Corps of Engineers is building a pioneer road, after which PRA contractors will build a permanent road. Access is not so much a problem at the Alaska end, hence first contract was let there.

Although no official information on the Lytle-Green contract is available, it is understood to be a fee contract covering only management. The contractors will not do the construction themselves but will oversee the work of subcontractors, picked subject to approval by PRA. The contractors have offices in Des Moines and are setting up offices in Alaska. O. W. Crowley has taken leave from his post as secretary of the Central Branch of the Associated General Contractors to serve as coordinator of the project.



Caterpillar Tractor Co. photos

Tractor Train Rescued from Icy Grave

Some of the tribulations of contractors rushing equipment to work on Alaskan air bases are illustrated by the photos above which show results of an unequal struggle between heavy machinery and thin lake ice.

A tractor train, one of three operated by Morrison-Knudson Co. to haul supplies, broke through the ice near the center of the lake. The three sleds making up the train followed the tractors and sank out of sight under the water.

Tripod derricks were rigged up for recovering the train, and a diver then attached cable slings to the rigs. The crews worked six days in salvaging the freight, sleds and tractor. The tractor was pulled up a ramp carried on long timbers to distribute the load. Cleaned, drained and fitted with new gaskets, the machine was ready for use within a few days.

Shown above, right, is the tractor after it was pulled from the lake; center is the tripod arrangement rigged for the salvage operation and below, the diver goes down to attach slings.

MEN AND JOBS

Stuart M. Weaver, city engineer, manager of the water department and executive assistant to the Board of Commissioners of Montclair, N. J., has been commissioned a Lieutenant Colonel in the Corps of Engineers. He has been assigned to the Washington office of the repairs and utilities branch, construction division, Office of the Chief of Engineers.

Maj. D. D. Rait, formerly assistant to the officer in charge, construction division, Pittsburgh District, Corps of Engineers, has been assigned as area engineer at the Warren Holding & Reconsignment Point, at Warren, Ohio.

B. J. Jelinek, formerly chief of the Milwaukee School Board's Bureau of Buildings and Grounds, has accepted a post as chief coordinating engineer for the Kroening Engineering Corporation of Milwaukee.

M. C. Harrington of Atlanta, Ga., project manager for the Federal Public Housing Authority, is in charge of the construction of a 270-unit housing project for civilian employees of the U. S. Marine Corps near Cherry Point, N. C.

Lucian H. Beebe, resident engineer for the Connecticut State Highway Department at Norwich, has resigned his position to accept a war post. An employee of the department for 18 years, Mr. Beebe was in charge of construction of a bridge at Middletown which received the 1938 award of the American Institute of Steel Construction.

J. D. Blount, of Wilson, N. C., is supervising construction of a municipal airport at that city.

Homer E. Anderson, of Alliance, Ohio, division engineer for the Ohio Highway Department, has been ordered to report to active duty as a Captain in the Corps of Engineers.

Conrad Z. Bailey is supervising WPA engineer on the construction of an airport near Elizabeth City, N. C.

W. D. Foy, formerly of Joliet, Ill., has become project manager of Crescent Gardens, federal housing project near Massillon, Ohio.

Four engineer employees of the Milwaukee Sewerage Commission recently resigned their posts to take new jobs with firms doing defense work. **H. Weber** and **J. Gaitens** have joined Consoer, Townsend & Quinlan at Madison, Wis.; and **J. Price** and **H. W. Webster** have joined the J. Donohue Co. at Milwaukee.

Parker H. Daggett, dean of the college of engineering of Rutgers University has been selected as director of the university's enlistment program for the armed forces.

Frank Budd, an engineer formerly working on the construction of the Des Moines, Ia., Ordnance plant, has joined the Portland Cement Assn. at Des Moines.

John B. Wentz has been transferred from the hull design department of the Newport News Shipbuilding and Drydock Co. to the plant engineering department.

Capt. L. C. Wilson, of the Corps of Engineers, has been designated area engineer for the construction of a training school near Goldsboro, N. C.

W. B. Walraven, engineer of the Springfield (Ill.) sanitary district, has been called to active service with the rank of Captain in the Corps of Engineers.

E. M. Basye, assistant to **Col. B. M. Casteel** as WPA administrator for Missouri, has been named to succeed his former chief. Col. Casteel resigned to go on active service with the Army.

W. H. Best, Jr., of Goldsboro, N. C., has been appointed county manager of Wayne County, N. C.

C. L. Gleason has been advanced from assistant district engineer to district engineer at Ames, Ia., for the Iowa State Highway Commission. Mr. Gleason replaces **A. A. Baustian,** who recently joined the Corps of Engineers.

Maj. E. E. Taylor of the Corps of Engineers has been placed in charge of construction of a defense base near Sioux City, Ia. He is assisted by **Lt. Lloyd Drevescraft** and **Lt. William P. Cornelius.**

James Lynah of Savannah, Ga., formerly with the overseas division of the J. G. White Engineering Co., has been appointed general manager of operations at Brunswick, Ga., for the Marine Construction Corporation.

John E. Fanning, engineer for the Iowa Division of the Illinois Central Railroad at Waterloo, Ia., for the past four years, has been promoted to assistant to the chief engineer of the system with headquarters at Chicago, Ill.

E. D. Braly, resident engineer with the North Carolina State Highway and Public Works Commission at Shelby, has resigned to accept an engineering post at Charlotte.

Hugh J. Davis, instructor in the engineering school of Southern Methodist University, has resigned to accept a post as an engineer for the Tennessee Valley Authority.

W. D. Smith, an engineer for the Tennessee Coal, Iron & Railroad Co. at Birmingham, Ala., has received a Captain's commission in the U. S. Army Ordnance Department.

Maj. Charles H. Pruden has been appointed commanding officer of an Ordnance Works scheduled for construction in Kansas.

John H. Thompson, Jackson County (Mo.) highway engineer and surveyor, has been called to active duty as a Lieutenant Colonel in the Corps of Engineers.

J. A. Page, Sr., of Chapel Hill, N. C., formerly general superintendent of construction at the University of North Carolina, has been named plant engineer of the Wright Automatic Machine Co. at Durham, N. C.

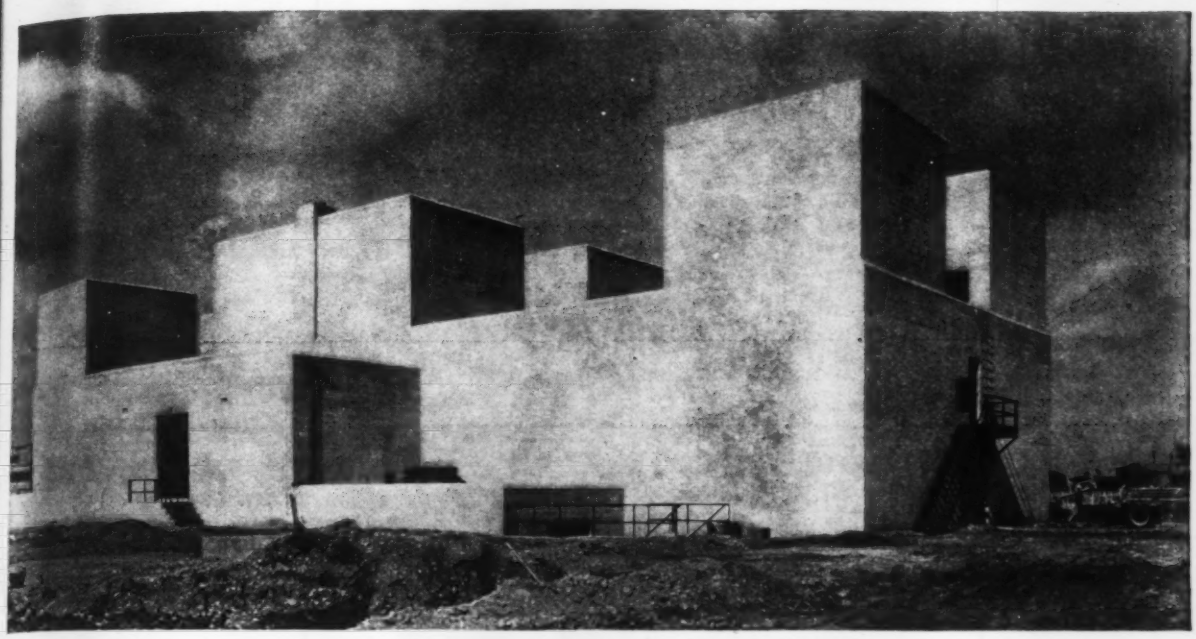
C. E. Piche, superintendent of Municipal Work Shops for Montreal, Canada, has become an engineer for the Department of Public Works in the city of Montreal.

E. J. Thomas, of Bismarck, N. Dak., former North Dakota State Engineer and Associate Engineer for the Water Conservation Commission, has resigned to accept a post with a Sioux City, Ia., architectural and engineering firm.

A. P. Ferguson of Detroit Lakes, Minn., has obtained leave of absence from his post as division highway engineer for the state highway department, to take a post as senior engineer at Sioux Falls, S. Dak., under United States engineering civil service.

Edward B. Evans, Jr., civil engineer at Omaha, Nebr., has been named chief office engineer in charge of construction of a new flying school in New Mexico.

Deroy H. Scott for 12 years filtration engineer for the Oklahoma City, Okla. water department, has been called to active service as a Captain in the Corps of Engineers. He is succeeded at Oklahoma City by **Frank S. Taylor,** for the past 15 years superintendent-chemist of the water department at Defiance, Ohio.



Test stand building for testing four engines simultaneously. Inlet stacks for the four test cells are at the corners; the outlet stacks are in the center and each serves two cells.

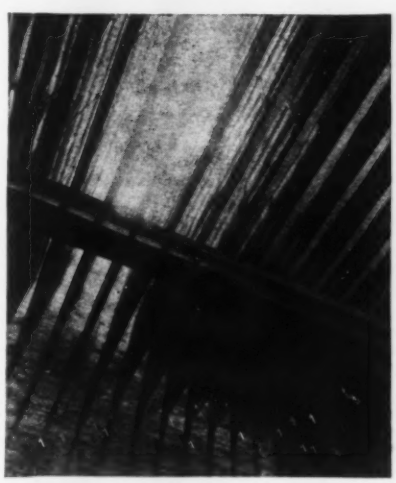
Glass Wool Ends Noise Problem in Test Cells for Airplane Engines

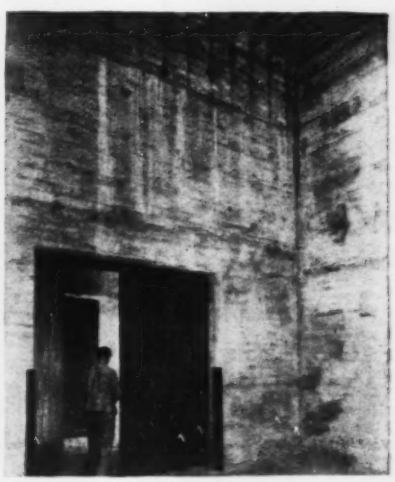
Final test of all aircraft engines now manufactured for our armed forces includes operation of each engine for several hours. The engines are so highly powered that in this test intense noise vibrations are developed. Thus, construction of effective sound stacks for controlling this noise is necessary in building satisfactory test buildings, more commonly called test cells.

A test stand for an aircraft engine usually consists of a test cell in which the engine is mounted, a central control room directly connected to the cell, and two sound stacks through which air enters and leaves the cell. The stacks, which may be above the cell or at that level, serve to admit and discharge air at high velocities, and they must absorb a large percentage of the noises generated.

The accompanying photographs shows a typical test cell and how glass wool has been used very effectively to solve the noise problem. Required qualifications for a satisfactory insulation included: A high noise absorption factor with a relatively high sound absorption coefficient throughout the audible-sound range; a high resistance to 100-mph. winds and severe climatic conditions, including repeated thawing and freezing; a fireproof material; elimination of the pollution of the air stream with fine particles; a material economical to maintain; and ability to withstand periodic removal of greases and other flammable materials. Because glass wool met these requirements it was used, as shown below.

With the installation illustrated 20-ft. square, vertical sound stacks about 40 ft. high, are employed. In each of these fifteen 20x20-ft. vertical sound absorbing panels are used. In addition a 30-ft. horizontal stack provides a 45x45-ft. opening and space for thirty-three 24x45-ft. additional sound-absorbing panels.





An interior view (left) of a 20-ft. square vertical inlet stack, as seen from test cell floor. Glass wool bats are held in metal frames in each of the fifteen vertical panels, which measure 20x20 ft. An inside view of a test cell (right) illustrating the height from the floor to the sound-absorbing baffles in the inlet stack.

Substitutes for critical materials outlined by the Munitions Board

To aid state highway departments, local road commissioners and the public works departments of cities in meeting prohibitions against the use of critical war materials, the Army and Navy Munitions Board has issued a list of products commonly used in building roads, bridges and culverts with recommended substitutions that can be made. The list and recommended substitutions are given below in full.

Substitutions proposed by the board frequently will make it unnecessary to apply for priorities for critical materials, thus speeding construction operations. As noted last week (*ENR*, May 7, p. 757), simplification of procedure in getting highway projects approved is expected in the near future, with definite amounts of steel and other critical materials allocated to the Public Roads Administration for that purpose. Structural steel can only be used for bridges with spans of more than 60 ft.

CRITICAL MATERIALS FOR CONSTRUCTION OF HIGHWAYS, BRIDGES AND CULVERTS

ITEM	MATERIALS USUALLY USED	SUBSTITUTIONS
Blast plates	Wrought iron or alloy steel	Alloy steels should not be used. Where blast plates are essential, they should be made of wrought iron or, if the type of plate will permit, of some form of cast iron. A heavy corrugated asbestos-cement composition board may be used.
Bridge rail	Steel	Use temporary wooden panels between concrete posts designed for future replacement with steel panels. Permanent reinforced concrete rail or adequately designed timber rail may be used.
Bridge shoes	Bronze; wrought iron; steel	Bronze should be used only where essential as on movable span bridges. On other bridges such substitutes as steel plates with graphite coating may be used. Roller or rocker types of shoes should be employed to avoid sliding plates. Use forgings only if absolutely essential. Long delays in delivery may be expected even under high priority rating.
Bridge shoe seatings	Lead	Use cement grout or possibly duck (heavy canvas) approximately 12 oz. swabbed with lead paint.
Concrete curing material	Burlap	For concrete structures cotton quilts may be used. For concrete pavement cotton quilts followed by ponding, wet straw or hay, wet earth, or by a spray coat of asphalt. Cotton quilts are described in Fed. Spec. E-CC-B-811. Curing with paper should be avoided.
Concrete curb nose	Metal	Omit
Concrete forms	Wood; steel	No removable steel forms should be used except those already fabricated.
Concrete form lining	Plywood; fibre board	Thin (¼-in.) plywood for form lining is still available in some parts of the country, but may be less obtainable within six or eight months. Fiber board should not be substituted. Specifications should allow other substitute form linings or allow omission of form linings where practicable. Preference ratings will not be extended for form linings.
Cribbing	Galvanized iron	Use treated timber or gravity type concrete.
Culverts	Metal plate	Avoid usage excepting where integrity of structure depends upon flexibility. Laminated treated wood, masonry arches, gravity type concrete arches or reinforced concrete boxes, concrete pipes or terra cotta may be substituted.
Dowel caps	Rubber	Use cardboard or other suitable substitute.
Electrical equipment		Unless immediate service is essential, installation of electrical equipment including lighting systems should be postponed.
Expansion bolts	Metal	Use ferrous material with non-metallic coating. Avoid fastening with lead.
Expansion dams in bridge floors	Structural steel	Use open joints with light steel edges and reinforced concrete diaphragms wherever practicable. If water falling through open joints is objectionable, it may be collected in small troughs in top of concrete bents.
Expansion joint filler	Cork or rubber	Eliminate both cork or rubber Use bituminous material or other suitable substitute.
Fence	Galvanized wire	Non-metallic coated ferrous metal. Wood posts. Wood fence wherever possible.
Fertilizer	Commercial forms	Avoid using ammonites and sodium nitrate in form of commercial fertilizers.
Flashing	Copper or lead	Although lead is sometimes used as a substitute for copper flashing, there is a critical shortage of both of these materials and both should be avoided for usage in waterproofing construction and expansion joints. Insofar as is practicable, joints should be designed without flashing. Possible substitutes for copper flashing are: (a) 26-gage galvanized iron or steel (Fed. Spec. E-QQ-I-696). (b) 26-gage black iron or steel painted with two coats of coal tar pitch paint (Fed. Spec. E-QQ-I-696 for black iron or steel). (c) 26-gage black iron or steel painted with one coat of red or blue lead and two coats of iron oxide or hydroxide paint. (Fed. Spec. TT-P-20, or TT-P-31). (d) Membrane consisting of a wire mesh embedded under pressure between two layers of asphaltic felt. Weight of membrane not less than 18 oz.-sq. yd. (e) Membrane consisting of 28-gage deformed sheet iron or steel coated on both sides with coal tar mastic and coal tar saturated cotton fabric. Weight of fabric after saturation not less than than 11 oz.-sq. yd. (f) Plastic flashing (U. S. Army Spec. 81-24-A).
Floors	Open steel grid or steel plate	Use only on movable spans and for emergency repairs.
Gratings	Cast iron	Grey iron castings are available for use where advisable. However, designs involving only concrete and wood should be employed as far as possible.
Guard fence	Metal plate or wire cable	Use wood, or stone
Gutters and downspouts	Copper, lead, galvanized ferrous materials	Use ferrous materials with zinc coating, painted black iron or steel or wood.
Hardware on timber bridges	Galvanized iron	Zinc coated hardware may be employed on timber bridge construction where advisable, especially in seacoast areas. Asphalt coated hardware may be used.

CRITICAL MATERIALS FOR CONSTRUCTION OF HIGHWAYS, BRIDGES AND CULVERTS

ITEM	MATERIALS USUALLY USED	SUBSTITUTIONS
Lamp standards	Metal	Use wood.
Manholes	Brick or reinforced concrete	Brick or plain concrete.
Manhole covers	Iron	Unless carrying direct traffic, use wood, terra cotta, or other non-metallic materials.
Masonry anchors, clamps and ties	Galvanized metal	Use non-metallic coated or uncoated ferrous metal.
Nails	Galvanized ferrous metals	Use uncoated ferrous metals where climate and usage permit.
Name plates. Plaques and ornamental fixtures	Metal	Omit.
Paint	Aluminum	Avoid usage. Zinc base paint is permissible if essential because of atmospheric conditions.
Paint	Red lead	Available to a reasonable extent. To conserve red lead, it is suggested that formulations containing red oxide or Asbestine to the extent of about 10 per cent be used. Vehicle should be limited to linseed oil for first coat of paint on structural steel. Iron oxide or iron hydroxide paint (Fed. Spec. TT-P-31) may be used. Blue lead may be substituted.
Paint	Blue lead	A reasonable supply is available. Vehicle should be limited to linseed oil for first coat of paint on steel.
Paint	White lead	A limited supply is available. It is suggested that exterior house paints may be confined to a formulation of lead-zinc inerts following Federal Specifications TT-P-36a. Vehicle should be limited to linseed oil for first coat of paint on steel.
Pipe culverts	Corrugated galvanized metal	Eliminate in general. Treated wood, reinforced concrete boxes or pipes or vitrified clay pipe may be substituted. Corrugated metal pipes should be used only where extensive articulation is needed to allow for differential settlements as in culvert pipes carrying heavy and uneven loads and supported on flexible bases.
Pipe culverts	Reinforced concrete	Use only where plain concrete, vitrified clay, wood, or other types not requiring metal are not satisfactory.
Pipe	Cast iron	Use asbestos-cement pipe or reinforced concrete where practical.
Pipe	Wrought iron	Eliminate unless essential.
Pipe	Black steel	Eliminate.
Piling	Steel sheet	Use only where essential. Designs should employ timber cofferdams as much as possible in place of steel sheet piling. Loose rock or unreinforced concrete should be employed as riprap for scour protection.
Piling	Steel H-beam	Use only where essential. Where timber piles are not satisfactory, precast reinforced concrete piles or cast-in-place (steel shell) reinforced concrete piles may usually be employed.
Piling	Reinforced concrete	Use reinforced concrete piles of either precast or cast-in-place type only where soil conditions render timber piles unsatisfactory as where exceedingly long piles are required.
Reinforcing steel bars	New billet	Design structures so as to employ a minimum amount of reinforcing steel consistent with the integrity of the structure. Use gravity type of retaining walls, piers, and abutments wherever possible. Increase depth of footings to reduce or eliminate reinforcing steel. Reduce span length as much as possible. Use a value of **n** equals 10 for most concrete, and 8 if 4,000 lb. concrete is secured. Use an allowable working stress of f_s equals 22,000 lb. per sq. in. for intermediate grade, and 20,000 lb. for structural grade reinforcing steel. Specifications might well allow minor deviations of reinforcing bar size and spacing so as to permit a contractor to utilize miscellaneous sizes of bars locally available. The use of reinforcement in concrete pavement should be eliminated wherever soil conditions permit by the substitution of non-reinforced slabs for reinforced slabs. When such substitution is made, it will be necessary to use slab lengths and thickness consistent with the design of non-reinforced concrete slabs. In slabs with thickened edges, dowels, or other load transversing devices are required at transverse joints. By substituting pavement slabs of uniform thickness for slabs with thickened edges, a reduction of steel across joints may be made inasmuch as provision for load transfer is not required and only enough steel is necessary across joints to maintain alignment.
Reinforcing steel bars	Re-rolled	Due to the shortage of scrap in steel production, the amount of railroad rails available for re-rolling is rather indeterminate and the quality of rails used is highly variable. For this reason a lesser amount of rerolled rail steel is now available and its quality is less dependable than in pre-war times.
Reinforcing steel	Wire mesh	Use only where essential for reinforcing concrete pipes, etc., and where integrity of structure, as in concrete pavement over soft subgrade, would be impaired by omission of mesh. Subgrade stabilization should be employed to reduce the need of reinforcing.
Riprap		Use loose rock where available. If concrete is the only suitable material, it should be used in bulk not reinforced and not in burlap bags.
Road signs	Metal	Use wood
Scuppers	Wrought iron or cast iron	Design to avoid usage of metals. This can be done by forming necessary openings in bridge floor concrete in positions where discharged water will not be objectionable.
Structural steel	Plates	Design to use as little structural plate as possible. Sheared plates exceeding 72 in. in width should especially be avoided. Plates produced by universal mills, that is up to in the neighborhood of 48 in., are more available than plates which must be produced by sheared plate mills. Wherever possible, designs should permit longitudinal splicing of two narrow plates rather than to require one wide plate. Only carbon steel should be employed. Steel plates can only be obtained through the process of allocation which has been established by the War Production Board.
Structural steel	Shapes	Where structural steel is the only material deemed suitable for the design of any structure, the sizes and shapes employed should be limited to the abbreviated list of shapes now being produced. This list of shapes was prescribed by the Office of Production Management in a general letter to all steel producers dated Oct. 22, 1941. Copies of the list with characteristics and design data are available from most major steel companies.
Temporary or secondary structures	Treated timber	Wood may be used for all purposes for which it is suitable. At present there appears to be no shortage of creosoted lumber. There may be a shortage of zinc salts treated lumber.
Traffic control devices	Signal lights	Avoid or postpone installation unless immediate control is essential.
Waterproofing	Paper products, bituminous materials, and fabric	Paper in practically all forms should be avoided. Fabrics with bituminous coatings and bituminous paint are available. Iron compounds should be avoided.

BRIEF NEWS

A FIVE-DAY course for engineers and architects on protection from aerial bombardment was held recently at the North Carolina State College at Raleigh as a part of the engineering science and management defense training program conducted by the college under the sponsorship of the U. S. Office of Education.

THE Rogers, Ark., city council announced recently it would negotiate with the Southwestern Gas and Electric Co. for the purchase by the city of the waterworks supply system. Marion L. Crist, Little Rock waterworks engineer, has placed a valuation of $167,809 on the system. Purchase would be made with funds from bonds voted for the purpose.

CONSTRUCTION of a $29,496 water facilities project at Vine Grove, Ky., necessitated by the increasing number of war industrial workers moving into the area, began recently.

Two steel and concrete water storage reservoirs at Asheboro, N. C., abandoned several years ago when a new waterworks was constructed, have been converted into air raid shelters providing sleeping room for 350 persons.

PLANS for construction of a $200,000 hospital at Tullahoma, Tenn., to be built by the Defense Public Works Division of the Federal Works Agency, are being drawn by Warfield & Keeble, Nashville, Tenn., architects.

THE Marshall office of the Texas Highway Department, established more than ten years ago to supervise road projects in Harrison, Panola and Marion counties, is being closed temporarily due to restrictions on road construction work.

A SYSTEM of gradual condemnation looking toward eventual abolition of broken down, fire-trap houses in various sections of Winnipeg, Man., has been undertaken by the municipality to prevent spread of a slum area. The plan is to extend over a five-year period, and will give tenants ample time to move from condemned buildings.

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Fouilhoux, Turner head New York building group

J. Andre Fouilhoux, architect who designed many of the buildings at the New York World's Fair of 1939 and 1940, and J. Archer Turner, president of the Turner Construction Co., were elected president and vice-president, respectively, of the New York Building Congress, Inc., at a recent annual meeting.

Mr. Fouilhoux, a member of the architectural firm of Harrison, Fouilhoux and Abramovitz, succeeds Max H. Foley as president of the group.

Officers reelected to serve for another year were: John J. Brennan, of the Building and Construction Trades Council of Greater New York, Long Island and vicinity, secretary-treasurer; Arthur C. Holden, of the architectural firm of Holden, McLaughlin & Associates, vice president and director; Alfred Rheinstein, president of the Rheinstein Construction Co., vice president and director; L. Andrew Rheinhard of the architectural firm of Reinhard & Hofmeister, vice president and director; John W. Pickworth of Weiskopf and Pickworth, treasurer and director; William Arthur Payne, secretary and director; Robert L. Mauchel, of the Master Builders, director.

Blame sanitary engineer lack on poor pay, future

Low salaries and lack of a future, plus competition by the armed forces, the U. S. Public Health Service, and industry, were cited last week by the Maryland State Department of Health as reasons for its inability to get trained men to fill its sanitary engineering vacancies.

Dr. Robert H. Riley, director, said the state may be forced to alter its program, possibly to the extent of having one medical officer in charge of two or more counties, with sanitary engineering services similarly curtailed.

George H. Hall, chief sanitary engineer, pointed out that basic salary of a junior assistant engineer is $1,800 per year. "When we contact sanitary engineering students," Mr. Hall said, "they want to know what future there is for them. Since we are unable to offer them remuneration that increases with their period of service and value to the department, they go elsewhere."

Speeding the War Effort:

America's war effort goes forward at an increasingly faster rate, through many agencies and many fields. Here are some developments of the past week, of special interest to the engineer and the constructor:

With the need for scrap steel becoming ever more urgent, new sources of the metal were turning up in unexpected places last week. For example, an abandoned railroad bridge near Malvern, Ark., containing an estimated 250,000 lb. of scrap has been offered to the government free of charge by the Cook Lumber Co. of Malvern. The span, over the Quachita River, originally was used for the company's railroad.

The Connecticut State Highway Department and the State Attorney General's office worked out an agreement whereby the highway department will take title to abandoned trolley rails along state highways in order to salvage the steel. The rails will be removed as a statewide WPA project.

The North Carolina Highway Commission added up its scrap steel figures last week and announced that it had already shipped nearly 5,000,000 lb. of scrap metal to steel mills and that 500,000 lb. more are now on hand awaiting shipment. C. C. Austin, equipment engineer for the North Carolina Commission said that the steel was recovered from discarded equipment, including automobiles, trucks and road machinery, washed-out bridges and other sources.

The Westinghouse Electric Company said that substitution of iron bases for brass on its lamp and light bulbs will save approximately 2,000,000 lb. of brass a year. All civilian lamp bulbs in the 10-watt to 300-watt sizes, and most industrial lamps, will have iron instead of brass bases this year, the bases being coated with a thin layer of brass to prevent corrosion.

Construction of the first all-steel anti-submarine patrol ships ever built in the Chicago region will begin in early summer at the shipyard now being erected near Chicago by the Pullman-Standard Car Manufacturing Co. By means of production methods that call for fabrication of large sections of the ships in the company's car works with final assembly on the ways, the yard ultimately will turn out a ship a week. Although almost all present employees of the car works will be kept in the ship construction, several thousand additional men will have to be engaged from the outside, company officials said.

Adding to the nation's store of information on its resources of strategic minerals, the Department of the Interior last week reported manganese deposits found in Cedar Creek Valley, Frederick and Shenandoah Counties, Virginia; chromite deposits found in Red Bluff Bay, Baranof Island, territory of Alaska, and antimony deposits found in the stampede Creek in the Kantishna District of Alaska.

OBITUARY

Edward W. Robinson, 68, president of Construction Management, Inc., of New York, died at St. James, L. I., recently. Mr. Robinson was a graduate of Stevens Institute of Technology, and prior to the World War, had served with Smith & Robinson, Snare & Triest Corp., and was vice president of Ruggles & Robinson Co. A major in the Corps of Engineers during the war, he became vice president and general manager of the Triest Contracting Co. afterwards, and joined the organization of Frederic R. Harris, in 1935.

Fred H. Dorner, 60, founder and past president of the Engineers' Society of Milwaukee, and former chairman of the Wisconsin chapter of the American Society of Mechanical Engineers, died recently at Milwaukee. Formerly associated with the Allis-Chalmers Mfg. Co. and the Bayley Mfg. Co., he was a consulting sales engineer at his death.

Phillip Kessler, 89, for 25 years an employee of the Milwaukee Dredging Co., working on its Alaska projects, died recently.

Kenneth Evans, former district engineer with the Illinois Department of Public Works and Buildings, died April 29 at his home in Belleville, Ill.

Malcolm Drummond Barclay, 61, senior member of the firm of Malcolm D. Barclay, Inc., land surveyors and civil engineers of Montreal, died recently. He was a member of the Engineering Institute of Canada.

Lewis C. Lewis, 73, retired safety engineer for the Ohio State Industrial Commission, died recently at his home in Columbus.

Walter F. Reynolds, chief of the Section of Triangulation, Division of Geodesy, U. S. Coast and Geodetic Survey, died recently in Baltimore, Md. He was 61.

Oscar S. Hoch, 75, founder and president of the Hoch Contracting Co. of Allentown, Pa., died May 7.

Alpheus J. Cone, 46, contractor of Jacksonville, Fla., died recently on a motor bus enroute from Jacksonville to Gainesville.

Alfred Q. Elgar, 86, retired building contractor whose firm built Carnegie Hall, died April 29 in New York.

Clarence M. Nevin, 62, Louisville, Ky., city plumbing inspector, died recently at Louisville.

W. A. Crawley of Clarksdale, Miss., who established the first water and light plant in that city, died there recently. He was 86.

Jesse Ludwick Howerton, of Monroe, N. C., superintendent for the R. B. Tyler Co., contractors, died recently.

John Bankston Hart, 62, retired contractor and builder of Orlando, Fla., died May 8.

Retires as senior engineer at Los Angeles

Harry Hodgman, senior engineer in the Los Angeles headquarters of the U. S. District Engineer, retired recently, after more than 48 years of service with the organization.

Mr. Hodgman, who is 70 years of age and lives at 931 South Mansfield Avenue, Los Angeles, made no announcement as to his retirement plans.

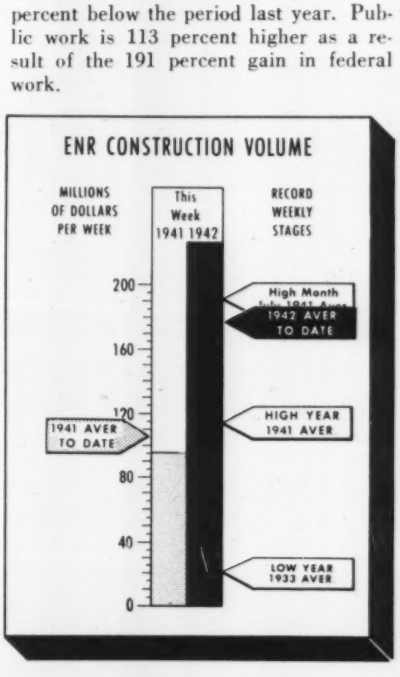
Through an error, *Engineering News-Record*, in its April 30 issue, printed a notice of Mr. Hodgman's death.

CONTRACTS AND CAPITAL

ENGINEERED CONSTRUCTION VOLUME for the week totals $229,877,000, an increase of 142 percent over the volume for the corresponding 1941 week, but 47 percent lower than the all-time high of a week ago. The week's total is the fifth highest of the year, and the seventh time in 1942 that the value of engineered construction work exceeded the $200,000,000-mark.

Public construction gains 256 percent over a year ago, but is 49 percent below the record of a week ago. Private work decreases 51 percent from the week last year, but is 1 percent higher than last week. Federal construction tops the 1941 week by 466 percent, but is 49 percent below the preceding week.

The current week's construction volume brings the 1942 total to $3,556,616,000, a 67 percent increase over the corresponding 20-week period in 1941. Private construction, $285,998,000, is 52 percent below the period last year. Public work is 113 percent higher as a result of the 191 percent gain in federal work.



In the classified construction groups, gains over the week last year are in waterworks, sewerage, public buildings, and unclassified construction. Increases over last week are in waterworks, bridges, and industrial buildings.

New capital for construction purposes for the week totals $7,476,000, a decrease of 48 percent from the corresponding 1941 week. The week's new financing is made up of $5,576,000 in state and municipal bond sales, $850,000 in corporate security issues, and $1,050,000 in RFC loans for public improvements.

New construction financing for the year to date, $6,785,328,000, is 110 percent above the $3,230,839,000 reported for the opening 20-week period last year.

CONTRACTS

(Thousands of dollars)

	Week Ending May 15 1941	May 7 1942	May 14 1942
Federal	$35,766	$396,120	$202,126
State & Municipal	23,838	21,644	10,380
Total public	$59,604	$417,764	$212,506
Total private	35,387	17,191	17,371
TOTALS	$94,991	$434,955	$229,877

Cumulative
1942 (20 weeks) $3,556,616
1941 (20 weeks) $2,129,468

Note: Minimum size projects included are: Waterworks and waterways projects, $15,000; other public works, $25,000; industrial buildings, $40,000; other buildings, $150,000.

NEW PRODUCTIVE CAPITAL

	Cumulative 1941 20 weeks	1942 20 weeks
NON-FEDERAL	$362,002	$246,373
Corp. Securities	109,202	77,264
State & Mun.	203,021	136,696
U.S.H.A. loans	22,550	.....
R.F.C. loans	27,229	32,413
FEDERAL	$2,868,837	$6,538,955
TOTAL CAPITAL	$3,230,839	$6,785,328

ENR INDEX NUMBERS

		1913	1926
Index Base = 100			
Construction Cost	May '42	272.30	130.89
Building Cost	May '42	220.14	119.00
Volume	Apr. '42	569	249

FHA MORTGAGES

	Week Ending May 10 1941	May 2 1942	May 9 1942
Selected for appraisal			
Title II	$34,156	$17,669	$21,219*
Title VI	$ 8,752	$11,377	$12,769*

* Subject to revision.

CONTRACT UNIT PRICES

What contractors are bidding on different kinds of construction work

PAVING, CHEMUNG COUNTY AIRPORT, NEW YORK

OWNER: Civil Aeronautics Administration, First Region, La-Guardia Field, New York, N. Y.

PROJECT: Paving of runways on the Chemung County Airport, near Elmira, N. Y. The three runways are each approximately 4,000 ft. long and 150 ft. wide. Alternates were allowed on the 243,000 sq. yd. of paving: Schedule I—asphalt emulsion; Schedule II—RT-6 or RT-7 (tar); and Schedule III—soil cement base course. Award made on basis of latter. Unit prices on previous contracts for the Chemung County Airport were published on page 18, March 5, 1941 issue of *ENR*.

CONDITIONS: Contractor to furnish all materials, equipment and labor, and complete work in 100 calendar days. Rail and highway transportation facilities available. Wage rates specified are: skilled labor, $1.00 to $1.50; semi-skilled, 62½c. to 90c.; and common labor, 62½c. per hr. Preference rating on project is A-4.

BIDS: Five bids were received March 11, 1942, on Schedule I; three bids on Schedule II; and five bids on Schedule III. Engineer's estimates were: (I) $286,565; (II) $288,925; (III) $287,814.

Schedule I

LIST OF BIDDERS: No award made on this basis.

1. James Gibbons Co., Relay, Md.	$315,558
2. Binghamton Constr. Co., Inc., Binghamton, N. Y.	343,915
3. Grandview Co., Mount Vernon, N. Y.	347,790
4. Del Balso & Sprague, Inc., New York, N. Y.	385,478
5. Fitzgerald Bros. Constr. Co., Troy, N. Y.	432,173

		Unit Prices		
Item	Quan.	(1)	(2)	(3)
1. Base course	243,000 s. y.	$0.19	$0.37	$0.34
2. Asphalt emulsion	5,780 ton	22.50	22.00	23.00
3. Blending aggregate	2,000 c. y.	2.55	2.00	2.40
4. Tack coat, RC-3 asphalt	195 ton	23.30	29.00	26.00
5. Bituminous mixture	18,300 ton	5.25	4.75	5.00
6. Asphalt cement, or RC-5	915 ton	18.50	19.00	19.65
7. RC-2 Asphalt	255 ton	23.30	26.00	26.00
8. Course aggregate	2,500 ton	4.30	2.50	2.50

Schedule II

LIST OF BIDDERS: No award made on this basis.

1. Grandview Co., Mount Vernon, N. Y.	$336,350
2. Binghamton Constr. Co., Inc., Binghamton, N. Y.	338,255
3. Fitzgerald Bros. Constr. Co., Inc., Troy, N. Y.	417,053

		Unit Prices		
Item	Quan.	(1)	(2)	(3)
1. Base course	243,000 s. y.	$0.34	$0.37	$0.54
2. RT-6 or RT-7	4,860 ton	25.00	25.00	29.00
3. Blending aggregate	2,000 c. y.	2.40	2.00	1.20
4. Tack coat, RC-3 asphalt	195 ton	26.00	29.00	30.45
5. Bituminous mixture	18,300 ton	5.00	4.75	5.60
6. Asphalt cement, or RC-5	915 ton	19.65	19.00	20.00
7. RC-2 Asphalt	255 ton	26.00	26.00	30.00
8. Course aggregate	2,500 ton	2.50	2.50	3.25

Schedule III

LIST OF BIDDERS: Award made on this basis.

1. Grandview Co., Mount Vernon, N. Y. (contract)	$303,134
2. D. W. Winkelman Co., Syracuse, N. Y.	306,859
3. Binghamton Constr. Co., Inc., Binghamton, N. Y.	341,783
4. Del Balso & Sprague, Inc., New York, N. Y.	347,427
5. Fitzgerald Bros. Constr. Co., Inc., Troy, N. Y.	371,005

		Unit Prices		
Item	Quan.	(1)	(2)	(3)
1. Excavating and grading	2,000 c. y.	$1.00	$1.00	$1.00
2. Soil cement base course	243,000 s. y.	.35	.44	.50
3. Cement	32,800 bbl.	2.65	2.60	2.75
4. Tack coat, emulsified asphalt	48,600 gal.	.14		
5. Bituminous mixture	18,300 ton	5.00		
6. RC-5 or asphalt cement	915 ton	19.65		
7. RC-2 cutback asphalt	255 ton	26.00		
8. Course aggregate	2,500 ton	2.50		

PAVING AND WIDENING STREET PENNSYLVANIA

OWNER: Allegheny County Commissioners, Pittsburgh, Pa.; R. G. Woodside, controller; Levi Burd Duff, engineer.

PROJECT: Reinforced-concrete paving, curbing, widening, and relocation of car tracks on Swissvale Avenue, from South to Edgewood Boro line, Wilkinsburg, Pa. Includes all necessary excavation, concreting, relaying of portion of brick pavement, drainage structures, demolition of buildings, and salvaging of some materials in existing pavement.

CONDITIONS: Rail and highway transportation facilities available. Contractor to furnish all materials and complete work in 90 days. Approximately five-sixths of the cost will be borne by the county, and the balance by the Pittsburgh Railways Co.

BIDS: Five bids were received March 24, 1942, ranging from the contract low of $85,915 to $99,635. Contract awarded April 7, 1942.

LIST OF BIDDERS:

1. Dinardo, Inc., Pittsburgh, Pa. (contract)	$85,915
2. Ben Construction Co., Pittsburgh, Pa.	87,608
3. McCrady Construction Co., Pittsburgh, Pa.	95,132
4. Nardulli & Sons, Inc., Pittsburgh, Pa.	97,664
5. M. O'Herron Co., Pittsburgh, Pa.	99,635

		Unit Prices		
Item	Quan.	(1)	(2)	(3)
1. Excavation, Class I	5,100 c. y.	$1.10	$0.90	$1.35
2. Excavation, Class II (if ordered)	25 c. y.	3.00	2.00	3.60
3. Remove and dispose of undisclosed artificial underground structures	5 c. y.	7.00	2.00	3.00
4. Concrete, Class A-M, sidewalk on grade	13,000 s. f.	.40	.35	.39
5. Concrete, Class A, base crse., 8-in.	290 s. y.	3.25	2.50	4.45
6. Concrete, Cl. A, base crse., 8-in. thick, incl. steel reinf. in street railway area	1,485 s. y.	3.10	3.00	3.50
7. Conc., Cl. A, base crse., 6-in., st. ry. area	730 s. y.	3.00	2.50	2.55
8. Conc., Cl. P, special one-course pavmt., 9-in. thick	7,800 s. y.	3.75	3.80	4.10
9. Conc., Cl. P, surf. crse., 4-in. thick, st. ry. area	2,130 s. y.	3.00	2.60	2.20
10. Class A-M conc. curb, with underdrain	1,850 l. f.	2.10	2.50	2.50
11. Class A-M conc. curb with underdr. and 6-in. perf. clay pipe	1,870 l. f.	2.30	3.00	2.85
12. Cement—substitution in HES. conc.	16,800 sacks	.25	.20	.18
13. Brick pavement, relaid	405 s. y.	2.50	2.00	1.85
14. 12-in. rein. conc. pipe culvert	320 l. f.	3.00	3.50	4.40
15. 15-in. rein. conc. pipe culvert	960 l. f.	3.25	4.00	5.10
16. 18-in. rein. conc. pipe culvert	240 l. f.	3.50	4.50	6.00
17. Brick storm inlets, type 1 and 1-a	24 ea.	135.00	150.00	225.00
18. Brick storm inlets, type 6	3 ea.	135.00	150.00	230.00
19. Brick manholes	5 ea.	150.00	120.00	200.00
20. Raising catch basin, storm inlet or manhole castings	15 ea.	10.00	10.00	20.00
21. Lowering catch basin, storm inlet or manhole castings	2 ea.	10.00	20.00	15.00
22. Underdrain with 6-in. perf. clay pipe	300 l. f.	1.25	1.00	1.45
23. Steel reinforcement bars	6,000 lb.	.10	.10	.08
24. Sheeting, shoring and bracing, left in place	5 Mbm.	30.00	30.00	30.00
25. Demolition, Bldg. 1, if ordered	L. S.	100.00	125.00	125.00
26. Demolition, portion Bldg. 2, if ordered	L. S.	300.00	330.00	300.00
27. Demolition, portion Bldg. 3, if ordered	L. S.	250.00	300.00	250.00
28. Demolition, Bldg. 4, if ordered	L. S.	100.00	125.00	125.00
29. Demolition, Bldg. 5, if ordered	L. S.	100.00	125.00	125.00
30. Demolition, Bldg. 6	L. S.	100.00	125.00	125.00
31. Demolition, portion Bldg. 7	L. S.	250.00	300.00	240.00
32. Demolition, portion Bldg. 8	L. S.	250.00	300.00	100.00
33. Deliver brick removed from exist. pvmt. to main warehouse, Blawnox	120 M.	3.00	8.00	9.00
34. Deliver sound curb stone removed from Swissvale Ave. to warehouse	3,000 l. f.	.50	.50	.50
35. Deliver sound flagstone removed from Swissvale Ave. to warehouse	800 l. f.	.50	.50	.60
36. Deliver broken curb, flagstone and stone removed from wall to warehouse	100 ton	4.00	3.00	4.50
37. Contractors' tools, plant, equipment and overhead	L. S.	2,500.00	3,500.00	2,600.00
38. Maintenance of traffic	L. S.	1,000.00	1,500.00	750.00